

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

PRED-FIRST (c) Reliability Prediction Program, BJM Engineering Services

Date: FEB-27-2009

End Item Title : R3G SERIES MTBF

End Item Part Number : R3G-5500V4V (RoHS)

R3G-5500V4V (RoHS) MTBF : 189,643

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : GIN / MTBF

Power Unit Module : GIN-3500V (RoHS)

Environmental Condition: GB

RELIABILITY MODELING OF REDUNDANT UNITS

Two Redundant Units:

Two identical units may be connected in parallel, each capable of supplying the total required output. If one unit fails and can be removed from the system (does not interfere with the operation of the other unit), then the other unit supplies the required output. Using a constant failure rate, the following relations apply.

$$\begin{aligned}\text{Total Failure Rate}(F) &= M \lambda / (3 / 2) + B \lambda \\ &= 6.916657 / (3 / 2) + 0.662208 = 5.273313\end{aligned}$$

$M \lambda$ = Main power failure rate , $B \lambda$ = Back plane failure rate

$$\begin{aligned}\text{R3G-5500V4V (RoHS)(MTBF)} &= F / 10^6 \text{Hrs} = 5.273313 / 10^6 \\ &= 189,634\end{aligned}$$

ZIPPY TECHNOLOGY CORP
10F, No.50, MIN CHYUAN RD
SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

	RELIABILITY PREDICTION STANDARD REPORT					
		(Sorted by Part Number)				
		MIL - HDBK - 217F, Notice 2				
Date : FEB-27-2009 Time : 08:29:58						
End Item Title : GIN SERIES MTBF						
End Item Part Number : GIN-3500V (RoHS)						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : GIN/MTBF						
Module Reference Designation : GIN						
Environmental Condition : GB						
<u>GIN-3500V (RoHS)</u>						
ITEM	Part	Ref	Qual	Quant	Individual	Total
#	Number	Desig	Level		Failure Rate	Failure Rate
					(F/10^6Hrs)	(F/10^6Hrs)
1	B102130002	BOM	NMIL	1	0.074349	0.074349
2	B102330004	BOM	NMIL	1	0.316157	0.316157
3	B102600002	BOM	NMIL	1	0.216158	0.216158
4	B102720003	BOM	NMIL	1	0.141808	0.141808
5	B200000058	BOM	SPECIAL	1	0.094935	0.094935
6	B200000080	BOM	SPECIAL	2	0.094935	0.189870
7	B200000092	BOM	SPECIAL	1	0.094935	0.094935
8	B200000144	BOM	SPECIAL	1	0.094935	0.094935
9	B200000252	BOM	SPECIAL	1	0.094935	0.094935
10	B200000268	BOM	SPECIAL	1	0.094935	0.094935
11	B200000308	BOM	SPECIAL	3	0.094935	0.284805
12	B200000309	BOM	SPECIAL	1	0.094935	0.094935
13	B200000316	BOM	SPECIAL	1	0.094935	0.094935
14	B200010022	BOM	NMIL	1	0.000798	0.000798
15	B200010056	BOM	NMIL	4	0.000798	0.003192
16	B200010057	BOM	NMIL	2	0.031398	0.062796
17	B200010067	BOM	NMIL	2	0.000798	0.001596
18	B200010080	BOM	NMIL	2	0.031398	0.062796
19	B200010081	BOM	NMIL	2	0.031398	0.062796
20	B200010083	BOM	NMIL	2	0.000798	0.001596
21	B200010084	BOM	NMIL	1	0.031398	0.031398

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22	B200020004	BOM	NMIL	10	0.005156	0.051560
23	B200020014	BOM	NMIL	1	0.005156	0.005156
24	B200030019	BOM	NMIL	1	0.018136	0.018136
25	B200040015	BOM	NMIL	1	0.005967	0.005967
26	B200040059	BOM	NMIL	1	0.005967	0.005967
27	B200040063	BOM	NMIL	1	0.018136	0.018136
28	B200050002	BOM	NMIL	1	0.005218	0.005218
29	B200050039	BOM	NMIL	1	0.005218	0.005218
30	B200050040	BOM	NMIL	5	0.005218	0.026090
31	B200050045	BOM	NMIL	1	0.005218	0.005218
32	B200050054	BOM	NMIL	1	0.078027	0.078027
33	B200060009	BOM	NMIL	1	0.012969	0.012969
34	B200110001	BOM	NMIL	3	0.004650	0.013950
35	B200110022	BOM	NMIL	1	0.004650	0.004650
36	B200110035	BOM	NMIL	1	0.004650	0.004650
37	B200110040	BOM	NMIL	1	0.004650	0.004650
38	B200110042	BOM	NMIL	2	0.004650	0.009300
39	B200110046	BOM	NMIL	6	0.004650	0.027900
40	B200110120	BOM	NMIL	3	0.004650	0.013950
41	B200110123	BOM	NMIL	2	0.004650	0.009300
42	B200110127	BOM	NMIL	3	0.007440	0.022320
43	B200110172	BOM	NMIL	1	0.004650	0.004650
44	B200110227	BOM	NMIL	3	0.004650	0.013950
45	B200110259	BOM	NMIL	1	0.004650	0.004650
46	B200110261	BOM	NMIL	1	0.004650	0.004650
47	B200110266	BOM	NMIL	2	0.004650	0.009300
48	B200110276	BOM	NMIL	2	0.004650	0.009300
49	B200110282	BOM	NMIL	10	0.004650	0.046500
50	B200110303	BOM	NMIL	5	0.005115	0.025575
51	B200110317	BOM	NMIL	2	0.004650	0.009300
52	B200110343	BOM	NMIL	1	0.004650	0.004650
53	B200110348	BOM	NMIL	1	0.004650	0.004650
54	B200110489	BOM	NMIL	1	0.004650	0.004650
55	B200110491	BOM	NMIL	1	0.004650	0.004650
56	B200110492	BOM	NMIL	1	0.004650	0.004650
57	B200110494	BOM	NMIL	1	0.004650	0.004650
58	B200110503	BOM	NMIL	1	0.005115	0.005115
59	B200110505	BOM	NMIL	1	0.004650	0.004650
60	B200110506	BOM	NMIL	1	0.004650	0.004650
61	B200110510	BOM	NMIL	1	0.004650	0.004650

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62	B200110512	BOM	NMIL	1	0.004650	0.004650
63	B200110519	BOM	NMIL	1	0.004650	0.004650
64	B200110520	BOM	NMIL	1	0.004650	0.004650
65	B200110523	BOM	NMIL	1	0.004650	0.004650
66	B200110525	BOM	NMIL	1	0.004650	0.004650
67	B200110541	BOM	NMIL	1	0.004650	0.004650
68	B200110544	BOM	NMIL	1	0.004650	0.004650
69	B200110550	BOM	NMIL	1	0.004650	0.004650
70	B200110554	BOM	NMIL	8	0.004650	0.037200
71	B200110574	BOM	NMIL	1	0.005115	0.005115
72	B200110581	BOM	NMIL	1	0.004650	0.004650
73	B200110584	BOM	NMIL	2	0.004650	0.009300
74	B200110588	BOM	NMIL	1	0.004650	0.004650
75	B200110600	BOM	NMIL	1	0.004650	0.004650
76	B200110613	BOM	NMIL	1	0.004650	0.004650
77	B200110665	BOM	NMIL	1	0.004650	0.004650
78	B200110675	BOM	NMIL	1	0.004650	0.004650
79	B200120015	BOM	NMIL	1	0.008509	0.008509
80	B200120118	BOM	NMIL	2	0.008705	0.017410
81	B200120154	BOM	NMIL	1	0.008509	0.008509
82	B200120160	BOM	NMIL	1	0.008705	0.008705
83	B200160011	BOM	NMIL	1	0.065000	0.065000
84	B200160017	BOM	NMIL	1	0.065000	0.065000
85	B200170013	BOM	NMIL	2	0.005156	0.010312
86	B200180018	BOM	N/A	1	0.009327	0.009327
87	B200180075	BOM	N/A	2	0.008923	0.017846
88	B200190022	BOM	N/A	1	0.015889	0.015889
89	B200190033	BOM	N/A	1	0.013308	0.013308
90	B200200006	BOM	N/A	6	0.007144	0.042864
91	B200200012	BOM	N/A	1	0.009203	0.009203
92	B200200017	BOM	N/A	8	0.011856	0.094848
93	B200200021	BOM	N/A	2	0.015274	0.030548
94	B200200060	BOM	N/A	1	0.012930	0.012930
95	B200200061	BOM	N/A	1	0.008470	0.008470
96	B200200062	BOM	N/A	2	0.007791	0.015582
97	B200200071	BOM	N/A	1	0.006048	0.006048
98	B200200094	BOM	N/A	3	0.007791	0.023373
99	B200220018	BOM	N/A	2	0.002416	0.004832
100	B200220020	BOM	N/A	1	0.002337	0.002337
101	B200220040	BOM	N/A	1	0.002198	0.002198

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102	B200230057	BOM	N/A	1	0.031594	0.031594
103	B200230198	BOM	N/A	4	0.058210	0.232840
104	B200230210	BOM	N/A	3	0.050508	0.151524
105	B200230277	BOM	N/A	2	0.041493	0.082986
106	B200230288	BOM	N/A	3	0.019246	0.057738
107	B200230338	BOM	N/A	4	0.029130	0.116520
108	B200230350	BOM	N/A	3	0.144509	0.433527
109	B200250009	BOM	NMIL	1	0.082858	0.082858
110	B200260125	BOM	NMIL	1	0.088051	0.088051
111	B200260215	BOM	NMIL	1	0.088051	0.088051
112	B200260228	BOM	NMIL	1	0.088051	0.088051
113	B200260245	BOM	NMIL	1	0.088051	0.088051
114	B200280013	BOM	NMIL	2	0.015958	0.031916
115	B200300219	BOM	NMIL	1	0.003845	0.003845
116	B200300236	BOM	NMIL	1	0.003845	0.003845
117	B200300265	BOM	NMIL	1	0.026144	0.026144
118	B200300274	BOM	NMIL	1	0.003845	0.003845
119	B200310007	BOM	NMIL	1	0.030600	0.030600
120	B210090085	BOM	KNOWNFR	1	1.995000	1.995000
121	B210160001	BOM	N/A	1	0.010000	0.010000
122	B210190921	N/A	STANDARD	1	0.022077	0.022077
			Total Failure Rate (F/10^6Hrs) :			6.916657
		Mean Time (in hours) Between Failures (MTBF) :			144,579	